

**REMARKS/ARGUMENTS**

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the above amendments and the following remarks.

**I. STATUS OF THE CLAIMS AND FORMAL MATTERS**

Claims 1 and 4-14 are pending in this application and have been rejected in the Office Action. In this response, new claim 15 has been added. No new subject matter is added as a result of the claim amendments.

It is submitted that these claims are patentably distinct from the prior art cited by the Examiner, and that these claims are in full compliance with the requirements of 35 U.S.C. § 112. The remarks made herein are not made for the purpose of patentability within the meaning of 35 U.S.C. §§ 101, 102, 103 or 112, but rather the amendments and remarks made herein are simply for clarification and to round out the scope of protection to which Applicants are entitled.

Initially, the Examiner is thanked for withdrawing the finality of the previous Office Action and for accepting the revised declarations.

**II. THE REJECTIONS UNDER 35 U.S.C. § 102(b) 35 U.S.C. § 103(a)**

In numbered paragraph 4 of the Office Action, claims 1, 4, and 11 are rejected as allegedly being anticipated by U.S. Patent No. 3,178,050 to Doerpinghaus ("Doerpinghaus"). In paragraph 6 of the Office Action, claims 1 and 4-14 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 2,613,169 to Cunningham ("Cunningham") in view of Doerpinghaus. The rejections are traversed for at least the following reasons.

As recited in independent claim 1, the instant invention is directed to, *inter alia*, a:

clamping mechanism for closing said opening, said mechanism having a receiving portion in which said end is inserted between a ring portion having a radially extending member with a curved

engaging surface which extends radially outward and a ring receiving surface having a corresponding geometry to said ring portion wherein a clamping force is exerted by the clamping mechanism clamping said end between said ring portion and said ring receiving surface thereby affixing said mechanism to said end.

Doerpinghaus, either alone or in combination with Cunningham fails to teach, disclose or motivate a skilled artisan to practice a clamping mechanism comprising "a ring portion having a radially extending member with a curved engaging surface which extends radially outward and a ring receiving surface having a corresponding geometry to said ring portion."

The Office Action asserts that, as shown in Figures 7 and 8, Doerpinghaus teaches a ring portion 59 with a radially extending member having a curved engaging surface 82, and a ring receiving surface 58 with a surface of corresponding geometry to the ring portion being 81. The Examiner also asserts that surface 81 is complementary to surface 82. Office Action ¶ 4. Applicants respectfully disagree. To correspond means to conform.<sup>1</sup> In the instant invention, ring portion 36 and ring receiving surface 48 are complementary surfaces having a corresponding geometry. That is, when the two surfaces of ring portion 36 and ring receiving surface 48 are brought into contact with each other, ring portion 36 conforms with or fits within the exterior surface of ring receiving surface 48. Said another way, when a flexible membrane is clamped into position between ring portion 36 and ring receiving surface 48, the clamping force exerted on the flexible membrane is distributed over the curved surfaces of ring portion 36 and ring receiving surface 48 in contact with the flexible membrane. The fact that the engaging surfaces are curved and have a corresponding geometry is significant in that the geometry of the surfaces impart a gentle transitional geometry that results in reduced stress concentrations in the

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<sup>1</sup> Webster's New World™ Collegiate Dictionary, Fourth Edition, 2004. A copy of which is included.

flexible membrane or fabric as well as results in less damage to the fabric, thereby increasing fabric durability. *See* page 8, lines 25-28.

In contrast, the curved engaging surface 82 of ring portion 59 (as characterized by the Examiner in the Office Action) and the curved engaging surface 81 of ring receiving surface 58 (as characterized by the Examiner in the Office Action), are not complementary and therefore do not have a corresponding geometry. That is, when engaging surfaces 81 and 82 are placed in contact with each other they do not conform with one another or fit one within the other as is the case with ring portion 36 and ring receiving surface 48 of the instant invention. Instead, only the high points on the corrugated walls 81 and 82 (engaging surfaces) are in contact with each other. In addition, forces acting on a fabric placed between engaging surfaces 81 and 82, will not be uniformly distributed over the engaging surfaces. Instead, the forces will be concentrated at the high points of the corrugated walls 81 and 82. Therefore, Doerpinghaus does not disclose engaging surfaces having a corresponding geometry.

In addition, paragraph 8 of the Office Action asserts that Doerpinghaus discloses a clamping mechanism made up of 58 and 59. Applicants respectfully disagree. Doerpinghaus fails to teach that the closure device includes a clamping mechanism that exerts a clamping force on the ring portion 59 and ring receiving surface 58 thereby clamping the end of the tubular structure between the two surfaces, affixing the clamping mechanism to the end of the tubular structure as required by claim 1 of the instant application.

As depicted in Figure 8 of Doerpinghaus, the flexible component C<sub>4</sub> attaches to the annular elements, 58 and 59, with the aid of a filler material 65. The flexible component C<sub>4</sub> and filler material 65, however, are not clamped in place. Instead, hard filler 65 is held in place by the corrugations in walls 81 and 82, of the upper portion of the annular space 64. Col. 9, lines

14-44. Although Figure 8 does show a clamping ring 63, this ring is not used to transmit a clamping force to the annular elements, 58 and 59, in order to clamp or lock the flexible component C<sub>4</sub> into position. Therefore, Doerpinghaus does not use a clamping mechanism to close an opening in the vessel.

Regarding Cunningham, the clamping mechanism in Cunningham differs from that of the instant invention. In the instant invention, clamping force on the fabric is provided by a clamping device that passes through the ring portion and ring receiving surface. In one embodiment, clamping force is provided by a nut 56 that is threaded down on a clamping screw 52. Page 8, lines 7-11. When the clamping screw 52 is tightened, a clamping force is generated on the fabric that is positioned between curved portion 44 of the ring portion 36 and beveled surface 48 of ring receiving surface 6, resulting in a seal between two sides of the fabric. Page 8, lines 16-17. When a clamping force is applied, however, the curved portion 44 and beveled surface 48 do not rotate with respect to one another. Instead, as the clamping screw 52 is tightened, the surfaces are brought closer to one another while remaining rotationally fixed. In additional embodiments, a clamping force can be generated by, but not limited to, a spring clamp with air or hydraulic release or an over-center locking device. Page 9, lines 1-4. In the instant invention, the clamping means or device and the ring portion and ring receiving surface are each separate devices or structures. Therefore, the curved portion 44 and beveled surface 48 do not rotate when a clamping force is applied. Since the surfaces in contact with the fabric do not rotate with respect to one another, regardless of the type of clamping device used, they will not abrade the fabric, which results in increased fabric durability.

The clamping mechanism in Cunningham, however, does not operate in a like manner. Instead, for a clamping force to be applied to a fabric, "[t]he nut 56 having wrench holes 57 is

engaged with the threaded post 54 and screwed down to clamp the parts firmly in place.” Col. 11, lines 16-19. In this configuration, as depicted in Figure 7, the nut 56 provides the flat clamping surface in contact with the container material. The clamping device (nut 56) and the flat clamping surface are not separate. Instead, they are one structure. Therefore, as the nut 56 is tightened down, the nut surface in contact with the container material rotates or turns. This causes the flat surface of the nut 56 to contact the container material that is being clamped and possibly abrade it, which results in decreased fabric durability. As a result, the clamping device and the flat clamping surface do not remain rotationally fixed with respect to one another when a clamping force is applied

For at least the foregoing reasons, since Doerpinghaus, either alone or in combination with Cunningham, fails to teach each and every limitation of claim 1, Applicants respectfully submit that claim 1 patentably distinguishes over the relied upon portions of the cited references and is therefore allowable. Further, claims 4-15 that depend from claim 1 are allowable therewith.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicant’s undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

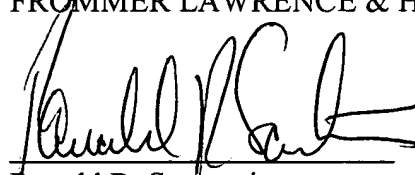
**CONCLUSION**

In view of the foregoing, it is believed that all of the claims in this application are patentable over the prior art, and an early and favorable consideration thereof is solicited.

Please charge any fees incurred by reason of this response and not paid herewith to Deposit Account No. 50-0320.

Respectfully submitted,  
FROMMER LAWRENCE & HAUG LLP

By:

  
\_\_\_\_\_  
Ronald R. Santucci  
Reg. No. 28,988  
(212) 588-0800



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A  
B

L, lit., body of the crime] 1 crime; material substance or licti in a murder case is not act that the victim has been victim in a murder case  
| a collection of all the laws of  
si') [ML, body of canon law] 1 Catholic Church up to 1918.  
ONICI  
body of civil law] the body of  
sued during the reign of Jus.  
European law  
pora lu'-tea (-ə) [ModL, lit.,  
w tissue formed in the ovary  
as discharged its ovum; if the  
as the hormone progesterone,  
preparation containing this  
rogestosterone  
rpota stri-a'ta (-ə) [ModL, lit.,  
riated ganglia in front of the  
n 3 correspondence 4 corre-  
--rad'-ing [-L corraderē, to  
radere, to scrape; see RAT] to  
ning water, wind, glacial ice,  
her debris --cor-ra'-sion (-rā-  
e, ring < L currere, to run; see  
g or capturing horses, cattle,  
e area made by drawing up  
circle --vt. --rallied', --ral'-ling  
al 2 to surround or capture;  
he form of a corral 4 [Slang]

< L correctus, pp. of corrigere <  
night, rule: see RECKON] 1 to  
right; remove errors from 2 to  
its of 3 to make conform to a  
to cause to rectify faults 5 to  
t, disease, etc.) --vt. to make  
tment so as to compensate (for  
--adj. 1 conforming or adher-  
per [correct behavior] 2 con-  
te, right, or free from errors 3  
amount, number, price, etc.  
--cor-rect'-ness n. --cor-rec-

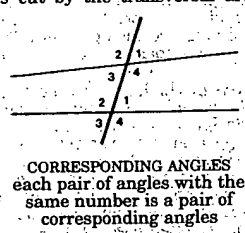
an absence of error (a correct  
ality [correct behavior]; accu-  
re to obtain conformity with  
the events, exact stresses  
or some standard (the exact  
suggests minute accuracy of  
or overly fastidious attitude  
PUNISH --ANT: wrong; false  
lens used to correct spherical  
ical mirror in certain optical

orreccion < OFr correctio < L  
corrected 2 a change that cor-  
to right, or from abnormal to  
the amount of change made in  
ding to correct faults 6 [usu-  
tion within a prison system 5  
al in the trend of prices in a  
n decline following, or in the  
--cor-rec'-tional (-əl) adj.  
d') n. [-CORRECT, after RECT-  
esp. in conduct; propriety  
rectif < LL correctivus] tending  
edial --n. something corrective;

egri da) 1494?-1534; It. painter  
fortified island in the Philip-  
y: in WWII, American-Filipino  
er the fall of Bataan; finally  
ender (May, 1942); recaptured

ack-form. < fol.] either of two  
lies the other --adj. closely and  
-ing to be mutually related (to  
mutual relation (with another  
cal relation between; specif., to  
dependent quantities, sets of  
the other)  
n. [ML correlatio: see COM- &  
or connection 2 the degree of  
a two sets of data (a correlational  
related --cor-re-la'-tional adj.  
any of several measures of con-  
variables  
ML correlativus] 1 having or  
eciprocally dependent (correl-  
expressing mutual relation and

used in pairs [In "neither Tom nor I can go," "neither" and "nor" are  
correlative conjunctions] --n. 1 a thing closely related to some-  
thing else 2 a correlative word --cor-re-la'-tively adv. --cor-re-la-  
tiv-ity n.  
cor-re-spond (kôr'a spând', kâr'-) vi. [MFr. correspondre < ML  
correspondere < L com-, together + respondere, to RESPOND] 1 to  
be in agreement (with something); conform (to something); tally;  
harmonize 2 to be similar, analogous, or equal, (to something) 3  
to communicate (with someone) by exchanging letters, esp. regu-  
larly --SYN. AGREE --cor-re-spond'-ingly adv.  
cor-re-spond-ence (-spân'dans) n. [ME < ML correspondentia <  
prp. of correspondere: see prec.] 1 agreement with something else  
or with one another; conformity 2 similarity; analogy 3 a) com-  
munication by exchange of letters, b) the letters received or writ-  
ten 4 Math. a clearly defined relationship between two members  
of a set, or different sets, as one-to-one correspondence  
correspondence school a school that gives courses of instruc-  
tion (correspondence courses) by mail, sending lessons and exami-  
nations to a student periodically, and correcting and grading the  
returned answers  
cor-re-spond-ency (-spân'dan sē) n., pl. --cies var. of CORRE-  
SPONDENCE (senses 1 & 2)  
cor-re-spond-ent (-spân'dant) adj. [ME < ML correspondens, prp.  
of correspondere, CORRESPOND] corresponding; agreeing; matching;  
analogous --n. 1 a thing that corresponds; correlate 2 a) a person  
who exchanges letters with another b) a person who writes to a  
magazine or newspaper, expressing an opinion, as on public affairs  
3 a person hired by a newspaper, radio or television network, etc.  
to furnish news, articles, newscast segments, etc. of a certain type  
or from a distant place 4 a person or firm acting for, or having  
regular business relations with, another at a distance  
corresponding angles Geom. a pair of nonadjacent angles, one  
interior and one exterior, on the same side of a transversal; these  
paired angles are equal if the lines cut by the transversal are  
parallel  
cor-re-spon-sive (-spân'siv) adj. [Archaic] corresponding  
cor-rida (kô' rē'tas; E kâ' rēd'ə) n.  
[Sp. corrida (de toros), (bull)-fight-  
ing, lit., a running, race < fem. pp.  
of correr, to run < L currere: see  
CURRENT] a public program in  
which a series of bullfights, usu-  
ally six, are held  
cor-ri-dor (kôr'ə dər, kâr'-, -dôr')  
n. [Fr < It corridore, a gallery, cor-  
ridor, runner < correre, to run < L  
currere: see CURRENT] 1 a long passageway or hall, esp. one onto  
which several rooms open 2 a strip of land, or an airspace, form-  
ing a passageway through foreign-held land, as from a country to  
its seaport  
cor-rie (kôr'ə, kâr'ə) n. [-Gael coire, cauldron < IE base \*kwer-,  
pot > OE hwer, kettle] [Scot.] a round hollow in a hillside  
Cor-rie-dale (kôr'ē dāl, kâr'-) n. [after Corriedale, New Zealand]  
a breed of rather large, white-faced sheep, developed in New  
Zealand for their wool and meat  
Cor-rien-tes (kôr' rēn'tes) city in N Argentina, on the Paraná  
River; pop. 258,000  
cor-ri-gen-dum (kôr'ə jən'dəm, kâr'-) n., pl. --da (-də) [L; ger. of  
corrige: see CORRECT] 1 an error to be corrected, esp. one in a  
printed work 2 [pl.] a list of such errors with their corrections,  
inserted in the published work  
cor-ri-gi-bile (kôr'ə jə bəl, kâr'-) adj. [ME < OFr < ML corrigibilis <  
L corrigere: see CORRECT] capable of being corrected, improved, or  
reformed --cor-ri-gi-bil'-ity (-bil'ə tē) n. --cor-ri-gi-bly adv.  
cor-ri-val (kôr' rī'vəl) n., adj. [L corralis: see COM- & RIVAL] [Now  
Rare] RIVAL  
cor-ro-bo-rant (kôr'ə bə'rənt) adj. [L corroborans, prp. of cor-  
roborare: see fol.] 1 corroborating 2 [Obs.] strengthening; said of  
a medicine or tonic --n. [Obs.] a tonic  
cor-ro-bo-rate (kôr'ə bə'rāt) vt. --rat'-ed, --rat'-ing [-L cor-  
roboratus, pp. of corroborare, to strengthen < com-, intens. +  
roborare < robur, strength: see ROBUST] 1 [Obs.] to strengthen 2  
to make more certain the validity of; confirm; bolster; support  
[evidence]: to corroborate his testimony] --SYN. CONFIRM --cor-  
ro-bo-ra'-tion n. --cor-ro-bor'a'-tor n.  
cor-ro-bor-a-tive (kôr'ə bə'rāt'iv, -ər ə tiv') adj. corroborating or  
tending to corroborate; confirmatory: also cor-ro-bor'a'-to'ry (-ər ə  
trē) [Obs.]  
cor-ro-bo-ree (kôr'ə bə'rē) n. [Austral dial. < native korobra,  
(dance) 1 a dance festival held at night by Austral. Aborigines to  
celebrate tribal victories and similar events 2 in 'Australia, a) a  
large or noisy festivity b) an uproar; tumult  
cor-rode (kôr'əd) vt. --rod'-ed, --rod'-ing [ME corrodere < OFr cor-  
roder < L corrōdere, to gnaw to pieces < com-, intens. + rodere, to  
gnaw; see RAT] 1 to eat into or wear away gradually, as by rusting  
or by the action of chemicals 2 to work upon insidiously and cause  
to deteriorate (a heart corroded by bitterness) --vt. to become cor-  
roded --cor-rod'-ible adj.  
cor-ro-sion (kôr'ə zən) n. [ME corrosioun < OFr corrosio < LL  
corrosio, pp. of L corrōdere: see prec.] 1 a corroding or being  
corroded 2 a substance, as rust, formed by corroding  
cor-ro-sive (kôr'ə sīv) adj. [OFr corrosif < ML corrosivus] 1 cor-  
roding or causing corrosion 2 bitingly sarcastic; cutting; acid --n.  
something causing corrosion --cor-ro-sively adv. --cor-ro-sive-  
ness n.



CORRESPONDING ANGLES  
each pair of angles with the  
same number is a pair of  
corresponding angles

327  
corrosive sublimate MERCURIC CHLORIDE  
cor-ru-gate (kôr'ə gāt', kâr'-) vt. --gat'-ed, --gat'-ing [-L corru-  
gatus, pp. of corrugare, to wrinkle < com-, intens. + rugare, to  
wrinkle] to shape or contract  
into parallel grooves and  
ridges; make wrinkles in; fur-  
row  
corrugated iron sheet iron  
or steel, usually galvanized,  
corrugated to give it added  
strength in construction  
corrugated paper paper or cardboard corrugated so as to be  
resilient, used for wrapping or packing  
cor-ru-ga-tion (kôr'ə gā'shən, kâr'-) n. [ML corrugatio] 1 a corru-  
gating or being corrugated 2 any of the parallel ridges or grooves  
of a corrugated surface  
cor-rupt (kôr'rupt) adj. [ME < L corruptus, pp. of corrumpere, to  
destroy, spoil, bribe < com-, together + rumpere, to break; see  
RUPTURE] 1 [Obs.] changed from a sound condition to an unsound  
one; spoiled; contaminated; rotten 2 deteriorated from the normal  
or standard; specif., a) morally unsound or debased; perverted;  
evil; depraved b) taking bribes; venal c) containing alterations,  
errors, or admixtures of foreignisms (said of texts, languages, etc.)  
--vt., vi. to make or become corrupt --SYN. DEBASE --cor-rupt'-er n.  
or cor-rupt'-or --cor-rupt'-ly adv. --cor-rupt'-ness n.  
cor-rupt-ible (kôr'ruptə bəl) adj. [ME < LL(Ec) corruptibilis] that  
can be corrupted, esp. morally --cor-rupt'-ibil'-ity (-tə bil'ə tē) n. --  
cor-rupt'-ibly adv.  
cor-rupt-ion (kôr'rup'shən) n. [ME corrupcion < OFr corruption < L  
corruptio < corruptus, CORRUPT] 1 the act or fact of making,  
becoming, or being corrupt 2 evil or wicked behavior; depravity 3  
bribery or similar dishonest dealings 4 decay; putridity; rotten-  
ness 5 something corrupted, as an improperly altered word or text  
6 [Rare] a corrupting influence  
cor-rupt-ion-ist (-ist) n. a person who engages in or upholds cor-  
rupt practices; esp. in public life  
cor-rupt-ive (kôr'rup'tiv) adj. [ME corruptif < LL(Ec) corruptivus]  
tending to corrupt or produce corruption --cor-rupt'-ively adv.  
corrupt practices acts' laws' limiting contributions to and  
expenditures in election campaigns, making illegal certain meth-  
ods of influencing voters, etc.  
cor-sage (kôr'sāzh', -sāj') n. [Fr < OFr cors: see CORPS & AGE] 1  
the bodice of a dress 2 a small bouquet for a woman to wear, as  
at the waist or shoulder  
cor-sair (kôr'ser', kôr'ser') n. [Fr corsaire < Prov corsar < It corsaro  
< ML cursarius, pirate, orig. swift < L cursus, COURSE] 1 a priva-  
teer, esp. of Barbary 2 a pirate 3 a pirate ship  
corse (kôr's) n. [Archaic] a dead body; corpse  
Corse (kôr's) Fr. name for CORSICA  
corse-let (kôr's'lit; for 2, kôr'sə let') n. [Fr < OFr, dim. of cors: see  
CORPS] 1 a piece of armor formerly worn to protect the trunk; also  
sp. cors'-let 2 a woman's undergarment combining a lightweight  
corset, usually without stays, or a girdle, and a bra; also, sp. cor'-se-  
lette  
cor-set (kôr'sit) n. [OFr, dim. of cors: see CORPS] 1 a closefitting  
undergarment, often tightened with laces and reinforced with  
stays, worn, chiefly by women, to give support or a desired figure to  
the body from the hips to or including the breast 2 a) a medieval,  
closefitting outer jacket; jerkin b) [Archaic] BODICE (sense 2) --vt.  
to dress in, fit with, or enclose as in a corset  
cor-se-tiere (kôr'sə tir', -tyer') n. [Fr corsetière, fem. of corsetier,  
corset maker < corset, prec. + -ier, -ER] 1 a person who fits clients  
for the correct size and type of corset, bra, etc. 2 a manufacturer  
of or dealer in foundation garments  
cor-setry (kôr'sə trē) n. 1 the work or trade of making, selling, or  
fitting corsets; girdles, etc. 2 corsets, girdles, etc.; collectively  
Cor-si-ca (kôr'si kə) political unit of France, an island in the Medi-  
terranean north of Sardinia; 3,351 sq mi (8,679 sq km); pop.  
250,000; chief city, Ajaccio --Cor'-si-can adj., n.  
Cor-tā-zar (kôr'tā zār; Sp kôr'tā zar), Ju-lío (hoō'lē ō) 1914-84;  
Argentine writer  
cor-tege or cor-tège (kôr'tezh', -tāzh') n. [Fr cortège < It corteg-  
gio, retinue < corte < L cohors: see COURT] 1 the group of attend-  
ants accompanying a person; retinue 2 a ceremonial procession, as  
at a funeral  
Cor-tes (kôr'tez', Sp kôr'tes) n. [Sp, pl. of corte < L cohors: see  
COURT] the legislature of Spain  
Cor-tés (kôr'tez', Sp kôr'tes'), Her-nan-do (hər'nən'dō) 1485-1547;  
Sp. soldier & explorer; conqueror of Mexico; also sp. Cortez'; Her-  
nán (er'nān') is sometimes used as a variant of Hernández  
cor-tex (kôr'teks') n., pl. --ti-ces (-tə sēz) [L, bark of a tree: see  
CORIUM] 1 a) the outer part or external layers of an internal  
organ, as of the kidney or the adrenal glands b) the outer layer of  
gray matter over most of the brain 2 Bot. a) a layer of tissue in the  
roots and stems of dicotyledonous plants, located between the stèle  
and epidermis b) loosely, any layer of stem tissue external to the  
xylem c) an outer layer of tissue in certain algae, lichens, and  
fungi 3 Pharmacy the bark or rind of a plant  
cor-ti-cal (kôr'ti kəl) adj. [ModL corticālis < L cortex (gen. corticis),  
bark of a tree] 1 of a cortex 2 consisting of cortex 3 involving, or  
in some way caused by, the brain cortex --cor'-ti-cally adv.

See the inside front cover for pronunciation information.  
The symbol is used to mark terms of American origin.

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